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| Davidson, Davidson & Kappel, LLC | | | EXAMINER | |
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| 14th Floor | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/574,057

Applicant(s)

VERON, JEAN-LUC

Examiner

JOHANNES P. MONDT

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-25 and 30-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-25 and 30-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/07/2007 has been entered.

Response to Amendment

2. Amendment filed 9/8/09 filed after Final Rejection has been entered following said request for Continued Examination. In said Amendment applicant cancelled claims 26-29 and substantially amended the remaining claims 23-25 and 30-33, filed Replacement Sheet for the Drawings of Figures 2 and 3, and filed an amendment to the specification. Said Amendments to the Drawings and the Specification are herewith accepted. The objections to the Drawings and the Specification have been overcome by said Amendments. Comments on Remarks by applicant are included below under "Response to Arguments".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. ***Claims 23-25*** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The claimed "loading location" (claim 23, line 17) has vague and ill-defined metes and bounds because said loading location can either mean "location as defined with the loading structure", or independent thereof in real space, thereby rendering the claims indefinite.

4. **Claim 31** recites the limitation "the shape and the dimensions of the fuel assembly" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. In particular, while any body has a shape and dimensions, "the fuel assembly" has not been claimed. Only "at least one fuel assembly" (line 4 of claim 23), while a plurality of fuel assemblies do not necessarily have a single shape and the same dimensions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 23 and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kraus et al (DE 196 40 393 A1 (see IDS), in view of Applicant's Admitted Prior Art (Specification, page 1) and Georii (WO03/063380 A1).

Kraus et al teach a method of packaging leaky fuel rods (col. 1, lines 3-38) for at least one of transport and storage, namely: for transport (col. 1, l. 55-63), each leaky fuel rod containing fuel material in tubular cladding ('Hüllrohr' 12a) (col. 3, l. 20) and

being closed at ends of the tubular cladding and presenting a sealing defect (by virtue of being leaky ("schadenhaft", col. 1, l. 24). The limitation on where the leaky fuel rods come from ("each leaky fuel rod coming from at least one fuel assembly") does not limit the method, but instead the intended use of the method. In this regard applicant is reminded that Applicant is reminded that intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art, which in this case it does not, considering that the fuel rod in Kraus is taken from a PWR reactor (col1. 2, l. 33+). In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963). Furthermore, Kraus et al teach their method to comprise:

making available a capsule 7, *capable* to receive a single leaky fuel rod, and comprising a tubular sheath 8 (col. 3, l. 8-14) and two end plugs 9 and 10 (col. 3, l. 8-14), at least one of the two end plugs configured to be removable [Examiner Note: although the claimed invention is a method, the instant limitation "configured...." limits a structure, i.e., the "at least one of the two end plugs", and as such constitutes a limitation of possible intended use only. Applicant is reminded that intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the

intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey,¹⁵² USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963). In the end plug 9 a screw pattern is present, and hence the limitation of capability of being removed is met];

placing a loading structure 40 ("Köcher", i.e., quiver) in the pool (col. 4,, l. 34+; Figure 4), in a disposition enabling the loading structure to receive at least one capsule with longitudinal axis in vertical position (in the vertical position defined as axial with respect to the fuel assembly), the loading structure having an open top end 53 ("Köcheröffnung, i.e., quiver opening; see col. 4, l. 58+);

securing on the open top end of the loading structure a device 54 ("Flansch mit Richtvorrichtung", i.e., flange with provision to point or direct) capable of being used for loading a fuel rod into the capsule (Figure 4: col. 4, l. 58 –col. 5, l. 14), said device 54 having an opening ("Durchtrittsöffnungen" 59/60 or any single one thereof: see loc.cit. and col. 5, l. 2-43) and guide device "Richtvorrichtung", including "Richtrollen" (guiding rollers" 57/58; col. 4, l. 63 – col. 5, l. 14) *capable* of being placed at the opening of device 54;

inserting said leaky fuel rod 12 coming from a fuel assembly (Figure 1 and col. 2, l. 33-59) into an empty capsule 7 (see Figure 1 where fuel rods 6 and capsules 7 are illustrated) in the loading structure at one loading location (by definition the location at which the loading is conducted is the "loading location"), said inserting including: once ensuring an open position of plug 9 of capsule 7, inserting a defective rod into the

capsule 7 via a guide device placed at the opening of the loading device (56-58: see Figure 4 and col. 4, l. 58 – col. 5, l. 14), and screwing the plug at the top end of the capsule into or back into place (col. 5, l. 52-55).

Kraus et al do not necessarily teach any of limitations on depositing the leaky fuel rods in a pool, making available a plurality of capsules and corresponding leaky rods as recited and unscrewing a plug of the capsule as a means to ensure the latter is in said open position.

However, it would have been obvious to include all of the other limitations not taught explicitly by Kraus in view of Georii, who, in a patent document on a container device for shipping (i.e., transport) of radioactive fuel for nuclear reactors (page 1, lines 1-10), hence analogous art, teaches a device 10 for intermediate containment with a "very high degree of safety against leakage" (see abstract and [0036]), and with room for a plurality of capsules 11 (page 3, lines 26+). One of ordinary skill in the art would have considered it obvious to use the device of Georii et al for a plurality of leaky fuel rods contained in capsules of the type of Kraus so as to transport a plurality rather than a single one of said capsules. Motivation derives from the economy of scale involved in transporting a plurality with a single loading structure rather than with as many as there are capsules; while it would have been obvious to one of ordinary skill in the art to unscrew a plug if said plug provides access to the interior of the capsule to be filled with said leaky fuel.

Finally, placing each capsule containing the leaky fuel rod in a location different from the at least one lading location (claim 23) is inherent in the transport of said

capsule (col. 1, l. 55-63), because transportation of the capsules places each capsule in a location different from the original loading location.

In conclusion, claims 23 and 32 are unpatentable over Kraus et al in view of Applicant's Admission of Prior Art (Specification, page 1) and Georii et al.

6. **Claim 33** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kraus et al (DE 196 40 393 A1 (see IDS), in view of Applicant's Admitted Prior Art (Specification, page 1) and Georii (WO03/065380 A1). The rejection is offered strictly subject to the noted indefiniteness under 35 USC 112, second paragraph, as detailed above, and is provided to the best of examiner's understanding, with assumptions noted as Examiner Notes below. N.B.: The examiner has ordered a translation of Kraus et al into English from the Office (Translations Branch of the U.S. P.T.O.), which will be mailed to applicant at the earliest possible time.

Kraus et al teach a method of packaging leaky fuel rods (col. 1, lines 3-38) for at least one of transport and storage, namely: for transport (col. 1, l. 55-63), each leaky fuel rod containing fuel material in tubular cladding ('Hüllrohr' 12a) (col. 3, l. 20) and being closed at ends of the tubular cladding and presenting a sealing defect (by virtue of being leaky ("schadenhaft", col. 1, l. 24). The limitation on where the leaky fuel rods come from ("each leaky fuel rod coming from at least one fuel assembly") does not limit the method, but instead the intended use of the method. In this regard applicant is reminded that intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is

capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art, which in this case it does not, considering that the fuel rod in Kraus is taken from a PWR reactor (col1. 2, l. 33+). In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963). Furthermore, Kraus et al teach their method to comprise:

making available a capsule 7, *capable* to receive a single leaky fuel rod, and comprising a tubular sheath 8 (col. 3, l. 8-14) and two end plugs 9 and 10 (col. 3, l. 8-14), at least one of the two end plugs configured to be removable [Examiner Note: although the claimed invention is a method, the instant limitation "configured..." limits a structure, i.e., the "at least one of the two end plugs", and as such constitutes a limitation of possible intended use only. Applicant is reminded that intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963). In the end plug 9 a screw pattern is present, and hence the limitation of capability of being removed is met];

placing a loading structure 40 ("Köcher", i.e., quiver) in the pool (col. 4,, l. 34+; Figure 4), in a disposition enabling the loading structure to receive at least one capsule

with longitudinal axis in vertical position (in the vertical position defined as axial with respect to the fuel assembly), the loading structure having an open top end 53 ("Köcheröffnung, i.e., quiver opening: see col. 4, l. 58+);

securing on the open top end of the loading structure a device 54 ("Flansch mit Richtvorrichtung", i.e., flange with provision to point or direct) capable of being used for loading a fuel rod into the capsule (Figure 4: col. 4, l. 58 –col. 5, l. 14), said device 54 having an opening ("Durchtrittsöffnungen" 59/60 or any single one thereof: see loc.cit. and col. 5, l. 2-43) and guide device "Richtvorrichtung", including "Richtrollen" (guiding rollers" 57/58; col. 4, l. 63 – col. 5, l. 14) *capable* of being placed at the opening of device 54;

inserting said leaky fuel rod 12 coming from a fuel assembly (Figure 1 and col. 2, l. 33-59) into an empty capsule 7 (see Figure 1 where fuel rods 6 and capsules 7 are illustrated) in the loading structure at one loading location (by definition the location at which the loading is conducted is the "loading location"), said inserting including: once ensuring an open position of plug 9 of capsule 7, inserting a defective rod into the capsule 7 via a guide device placed at the opening of the loading device (56-58: see Figure 4 and col. 4, l. 58 – col. 5, l. 14), and screwing the plug at the top end of the capsule into or back into place (col. 5, l. 52-55); since the quiver is placed in the pool and the capsule is placed in the quiver while the leaky fuel rod is placed in the capsule the leaky fuel rods are deposited in the pool (hence the limitation on line 3 of claim 33 is met).

Kraus et al do not necessarily teach any of limitations on depositing the leaky fuel rods in a pool, making available a plurality of capsules and corresponding leaky rods as recited and unscrewing a plug of the capsule as a means to ensure the latter is in said open position.

However, it would have been obvious to include all of the other limitations not taught explicitly by Kraus in view of Georii, who, in a patent document on a container device for shipping (i.e., transport) of radioactive fuel for nuclear reactors (page 1, lines 1-10), hence analogous art, teaches a device 10 for intermediate containment with a "very high degree of safety against leakage" (see abstract and [0036]), and with room for a plurality of capsules 11 (page 3, lines 26+). One of ordinary skill in the art would have considered it obvious to use the device of Georii et al for a plurality of leaky fuel rods contained in capsules of the type of Kraus so as to transport a plurality rather than a single one of said capsules. Note that the device of Georii is also intended for transport ('shipping containers') (see page 9, line 25+). *Motivation* derives from the economy of scale involved in transporting a plurality with a single loading structure rather than with as many as there are capsules; while it would have been obvious to one of ordinary skill in the art to unscrew a plug if said plug provides access to the interior of the capsule to be filled with said leaky fuel.

In the combined invention, moving each capsule containing the leaky fuel rod from the loading location to a different storage location is met because the location of the quiver is not the same as the location of the container device 10 of Georii, while during the storage of the capsules as capsules 11 in Georii's device when used as a

shipping container "storing and transporting the leaky fuel rods inside the capsules while in the storage location" is met.

In conclusion, claim 33 is unpatentable over Kraus et al in view of Applicant's Admission of Prior Art (Specification, page 1) and Georii et al.

Response to Arguments

7. Applicant's arguments filed 9/8/09 have been fully considered but they are not entirely persuasive, although the amendments overcome the objections to the Drawings and Specification set forth in the prior Office action, and although the grounds of rejection under 35 U.S.C. 112, first paragraph and second paragraph, as set forth in sections 7, 9-12, respectively, of the prior Office action, have been overcome by said amendments as well. However, regarding applicant's arguments in traverse of the rejections under 35 U.S.C. 103(a) and an explanation for the rejections as set forth in the instant office action examiner offers the following considerations in response to Remarks:

All of applicant's claimed limitations are met by the prior art within the broadest reasonable interpretation of the claim language. Claimed limitations cannot be persuasively argued to have a scope narrower than that, which is reasonably most broad. Applicant's argument that element 40 in Kraus is not placed in a pool is not persuasive because "socket" 40 has element 8 "under water", and hence (Figure 2) element 40 must have been placed in a body of water, which meets the claimed "pool". Furthermore, applicant argument on "transporting and storing" does not address the

rejection, which is in this regard based on obviousness in view of a secondary reference (Georgii et al). Motivation to combine the references comes from knowledge generally available to one of ordinary skill in the art and the references themselves. Lastly, the Supreme Court has consistently held that where all of the pieces of the invention are known in the prior art it is not patentable to combine known pieces, even to produce beneficial results, unless those results are unexpected and unpredictable. That is to say that if cogent reasoning, based in no part upon hindsight, demonstrates predictability of the new result, a patent will not issue. See *In Re Hotchkiss v. Greenwood*, 52 U.S. 248, which stated that even beneficial results of being "made firm and strong, and more durable" do not render an invention patentable over the prior art if those results are predictable; see also *In re KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007), which states "[T]he results of ordinary innovation are not the subject of exclusive rights under the patent laws. Were it otherwise patents might stifle, rather than promote, the progress of useful arts. See U.S. Const., Art. I, section 8, c1.8.

Furthermore, the amendment to claim 23 implies substantial broadening since as amended the location in which each capsule containing the leaky fuel rod is placed no longer is restricted to any support structure as claimed and as construed from the specification. Step-wise transport to storage inherently meets the limitation since the location of the capsule is different after a first step of transportation from the initial location. Hence claim 23 is also shown to be unpatentable over the same art as claims 32-33. The broadening of "location" as introduced by removing "of a support structure"

(claim 23, line 22) renders the coordinate system for said location is to be ill-defined, rendering the claim language indefinite.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Porowski (US 5,361,281).
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHANNES P. MONDT whose telephone number is (571)272-1919. The examiner can normally be reached on 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JOHANNES P MONDT/
Primary Examiner, Art Unit 3663